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Outdoor learning and nature connection: the teacher education aspect

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Introduction

- There is a push in the UK towards better outdoor provision in schools (Department for Education, 2006; Education Scotland, n.d.).
- There is no statutory requirement for schools and teachers to provide such experiences, and much still depends on the setting and practitioner’s **willingness** to undertake such teaching and learning experiences (Beames, Atencio and Ross, 2009).
- While barriers often include cost and accessibility of appropriate spaces, evidence suggests that another key barrier can be the teachers’ **confidence** in their ability to plan and deliver such experiences (O’Donnell, Morris & Wilson, 2006).
- Increasing training opportunities for teachers would aid in equipping teachers with the necessary knowledge, skill and understanding. In this regard **Initial Teacher Education** (ITE) programmes have been identified as a key way to build such skills and confidence in student teachers (University of Edinburgh, 2016).
- Outdoor learning often linked with greater understanding of **sustainability** (Irwin, 2008). Building a relationship with our environment and nature is key to truly understanding and enacting sustainability (Palmer & Suggate, 1996). In this respect, an area of focus for outdoor learning should be experiences that promote **Nature Connectedness** (NC) (Barrable & Arvanitis, submitted).
- Two types of routes emerge from the literature, as promoting NC:
 - 1) contact with nature (Hinds & Sparks, 2008)
 - 2) information about nature (Ernst & Theimer, 2011).

This study

In this study we aimed to examine the relationship between NC and

i) perceived competence to teach outdoors and

ii) willingness to plan and deliver outdoor sessions

in **student teachers**.

We also looked at whether participation in an **outdoor, environmental systems session** would have a positive effect on student teachers’ NC.

Instruments

Nature Connectedness

Nature Relatedness scale (NR; Nisbet, Zelenski & Murphy, 2009)

21 item, 5-Likert scale

e.g. ‘I am not separate from nature, but a part of nature’

Perceived Competence to Teach Outdoors (PCTO)

Adaptation of Perceived Competence Scale for Learning (PCSL; Williams & Deci, 1996).

4 item, 7-Likert scale

e.g. ‘I feel confident in my ability to deliver quality outdoor learning experiences’

Willingness to Teach Outdoors (WTO)

3 item, 7-Likert scale

e.g. ‘I will be incorporating outdoor learning experiences into my teaching’

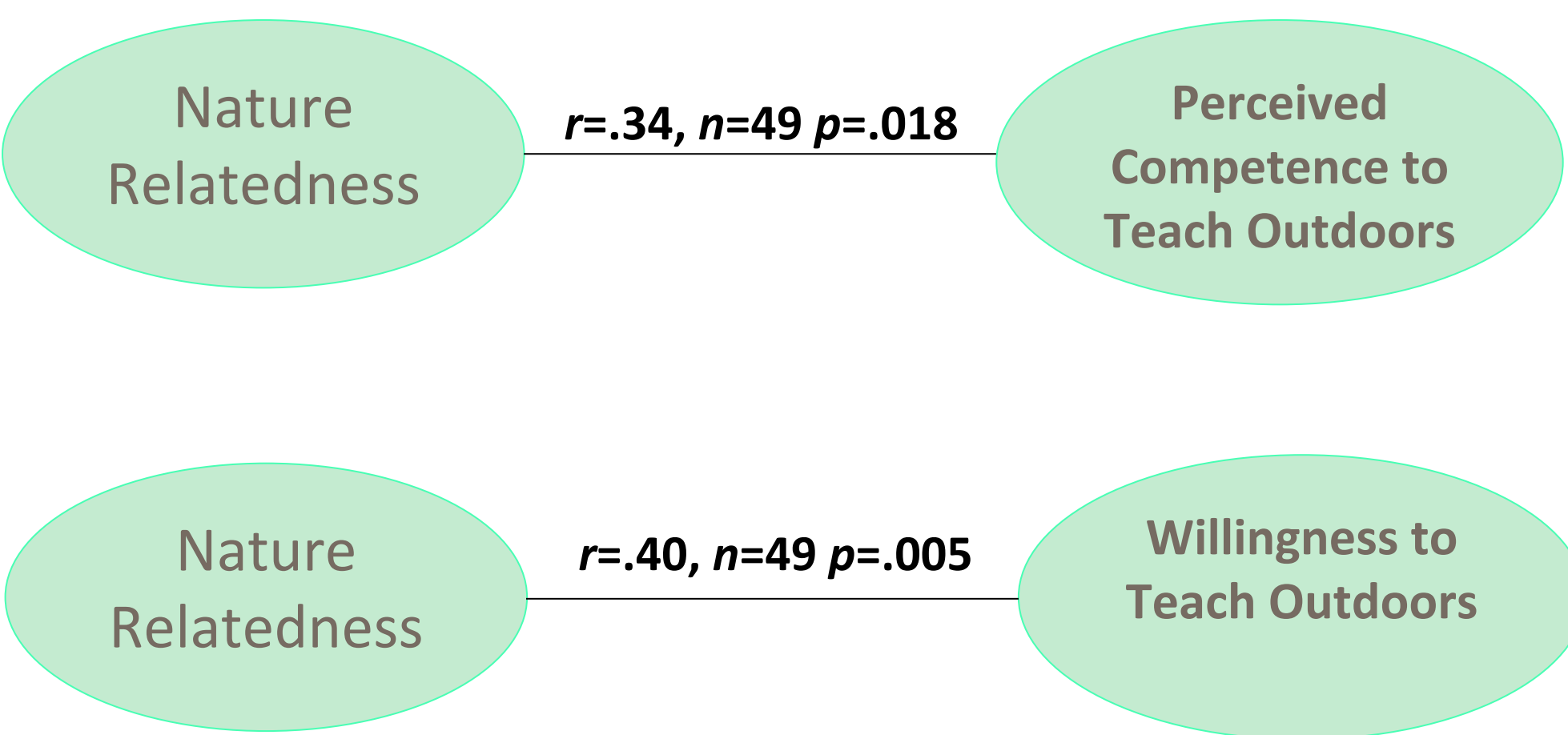
Participants & Method

- Total $n=49$ student teachers
- Undergraduate $n=34$
- Postgraduate $n=15$
- 84% were female ($n=41$)
- Age $M=24$ ($SD=7.04$), minimum of 19 years and maximum of 47.
- A pre-test / post-test design was used, measuring NR, PCTO and WTO before and after a half-day outdoor, environmental science session, which took place at the University Botanic Gardens.

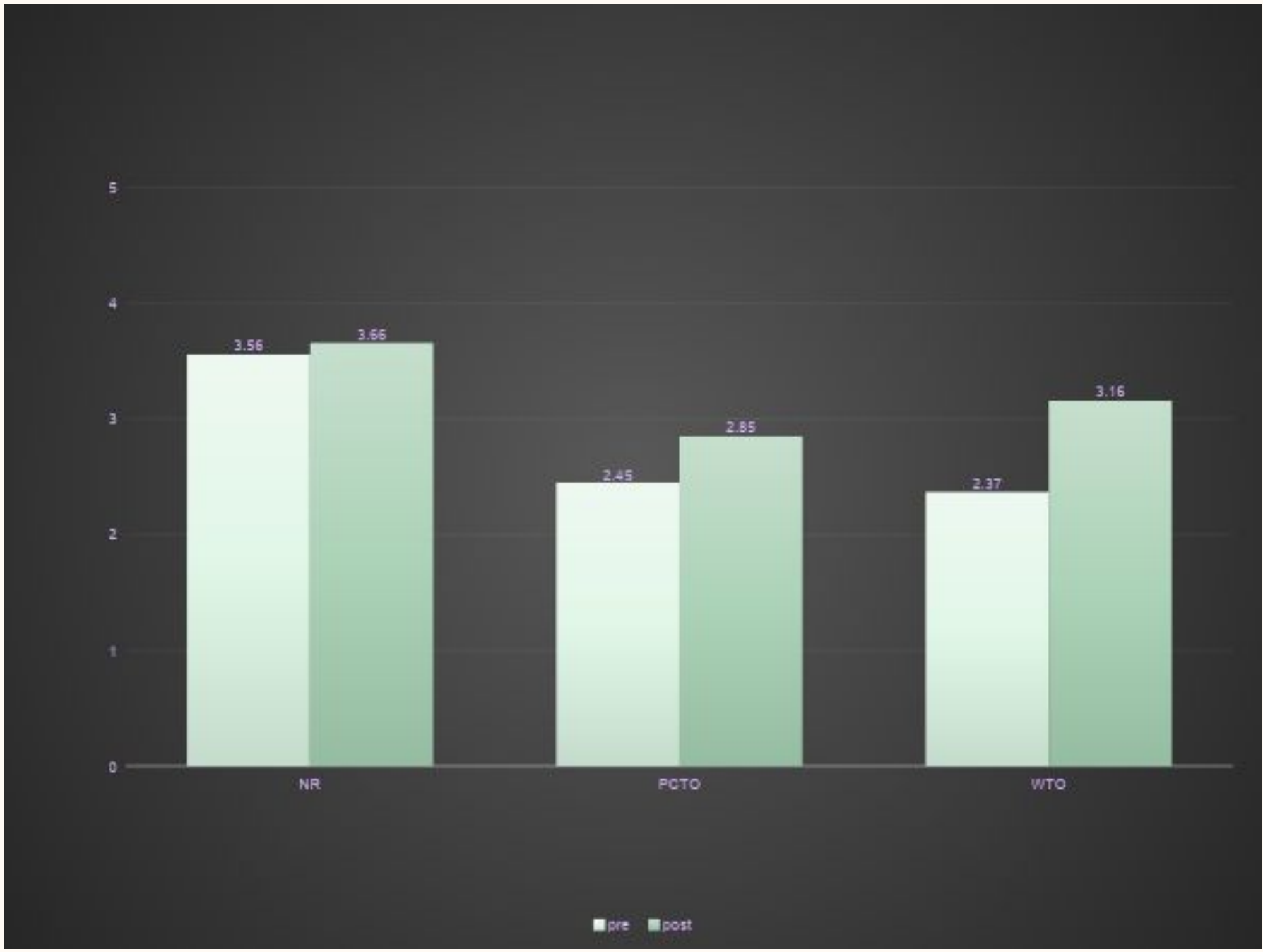


Results

Significant correlations were observed both between NR and PCTO, as well as NR and WTO.



Pre- and Post-session mean scores*



*PCTO and WTO scores have been converted from 7 point to 5 point.

A Wilcoxon Signed Ranks Test indicated that NR post-session was significantly higher than NR pre-session ($Z=3.45, p=.001$).

A paired samples t-test was used for PCTO. There was a significant difference in the scores for pre-session PCTO ($M=3.43, SD=1.16$) and post-session PCTO ($M=4.41, SD=1.21$); $t(42)=3.91, p=.000$.

A Wilcoxon Signed Ranks Test indicated that WTO post-session was significantly higher than WTO pre-session ($Z=4.06, p=.000$).

Discussion

- Our results indicate that there is a **positive correlation** between how close student teachers feel to nature and how competent they perceive themselves to be to undertake outdoor teaching sessions.
- NR is also **positively correlated** to their willingness to teach outdoors.
- The outdoor environmental systems session that our participants engaged in **had a significant positive effect on their NR**.
- There was also a robust increase in participants’ perceived competence and willingness to teach outdoors, as measured in this study.



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